



LaQuSo

★ Laboratory for Quality Software



LaQuSo

May 2005

What

How

Activities

Partnerships

Plans

- **Goal**

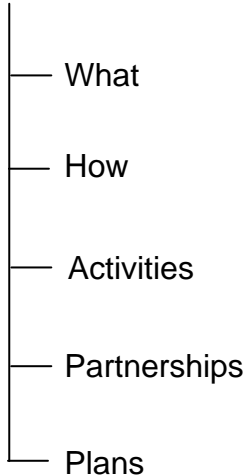
- Bridge between industry and science
- Transform knowledge into methods, techniques and tools that will be used in industry
- Added value with a low threshold

- **Focus**

- Quality of software
‘Requirements, architecture, specifications and source code’
- The product, not the process

- **Output**

- Diagnosis
- Certificate (Keurmerk)
‘LaQuSo could not detect any defects in this system’



- **LaQuSo research**

develop methods, techniques and tools to detect defects in artifacts of the software industry
by integration and extension of existing methods, techniques and tools

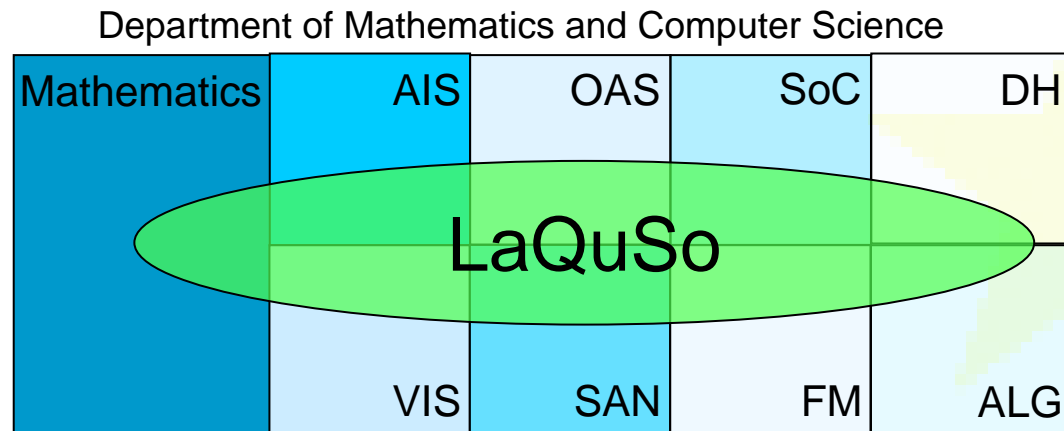
- As long as methods, techniques and tools (MTT) are under development, LaQuSo will apply them in case studies
- As soon as it becomes routine, the MTT will be transferred to industry
 - as spin off company or as licenses

- **Mission**

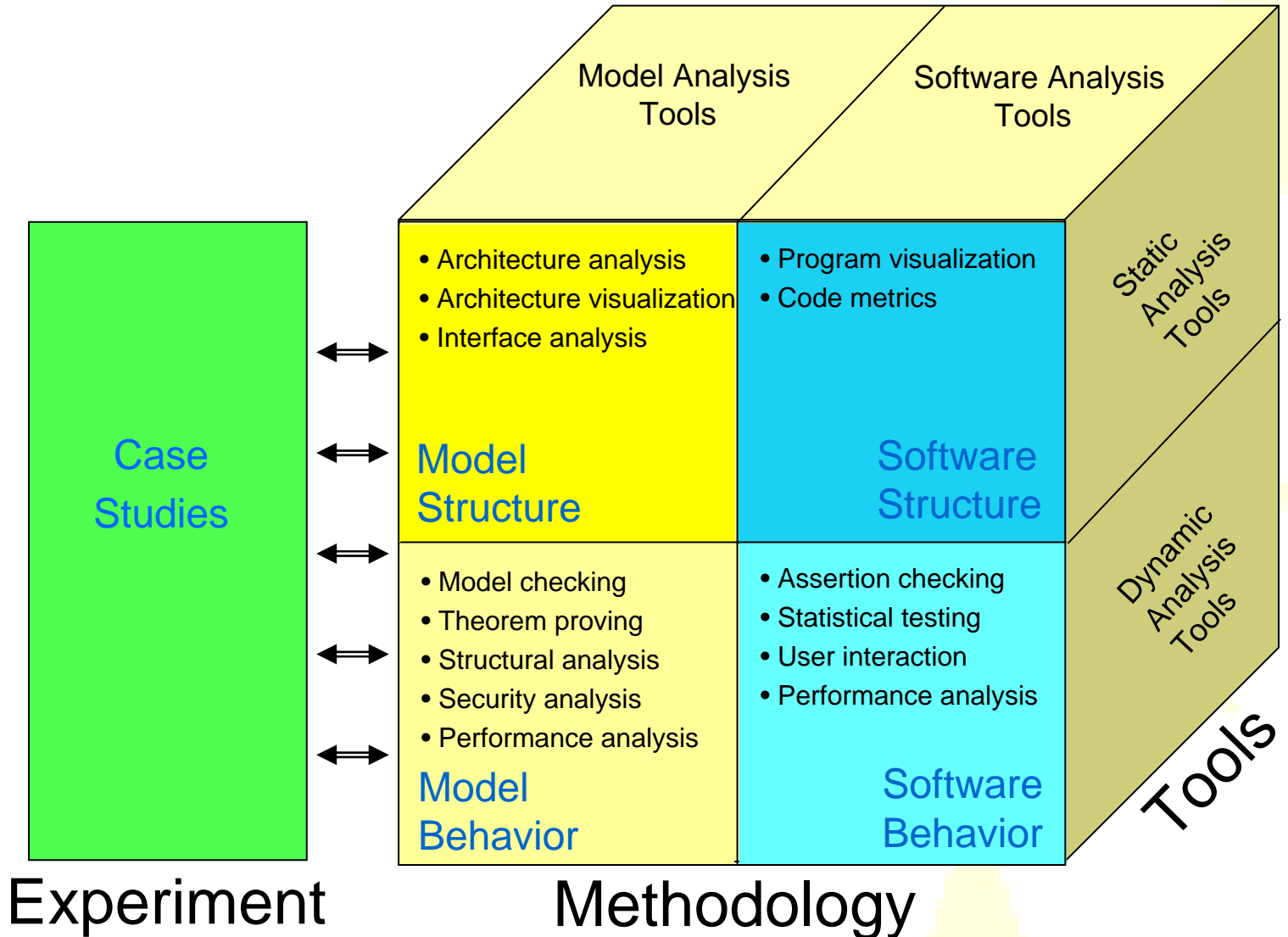
“to be recognized as one of the leading scientific institutes for quality software in Europe”

- LaQuSo is a research laboratory of the Department of Mathematics and Computer Science of the TU/e (and Radboud University Nijmegen)

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Theme → Program → Project

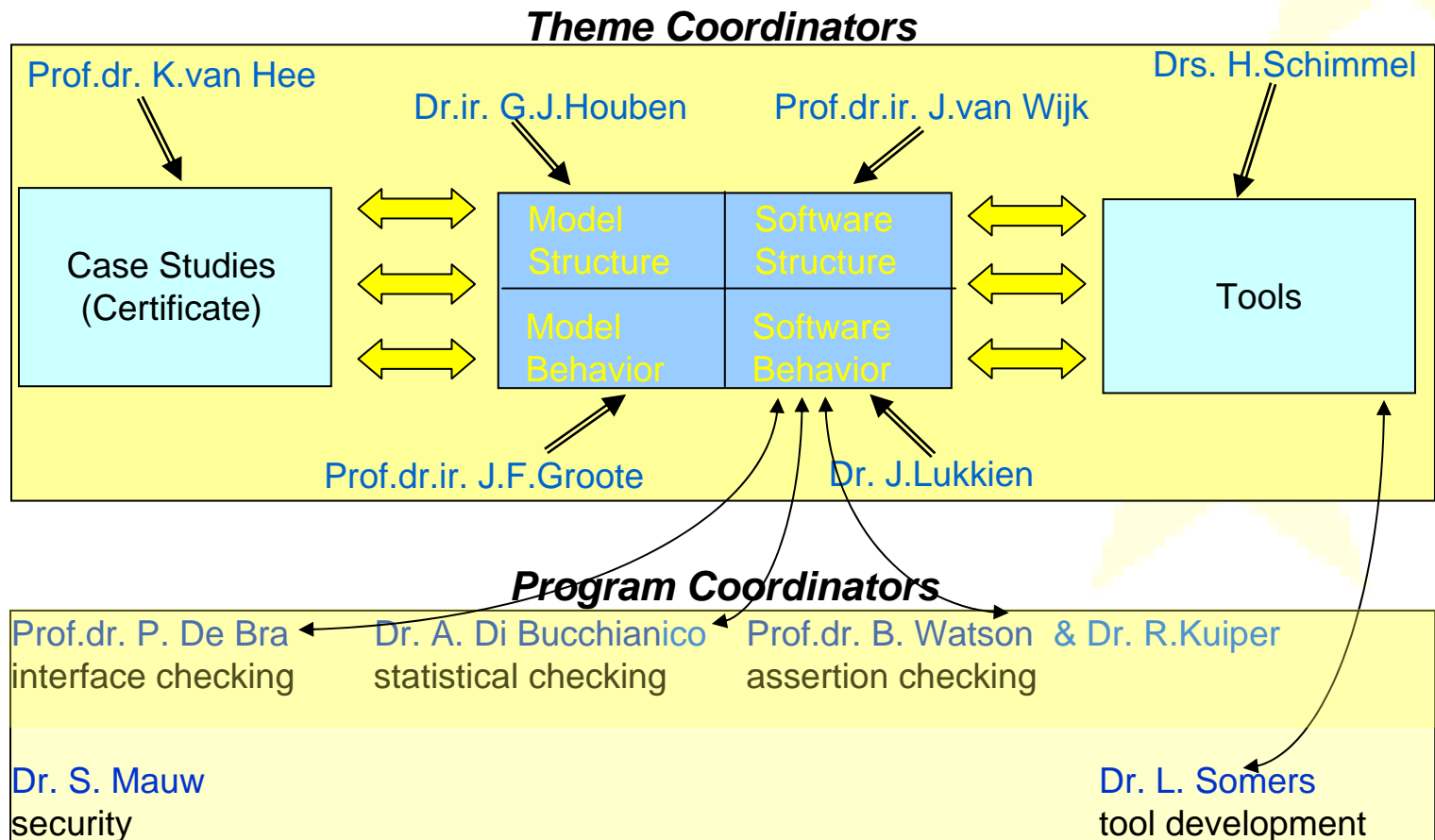
What

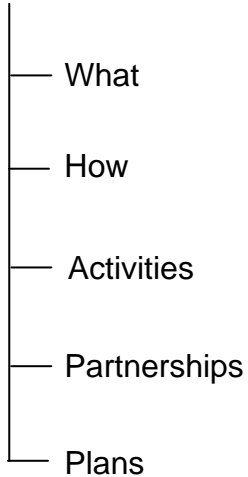
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Activities

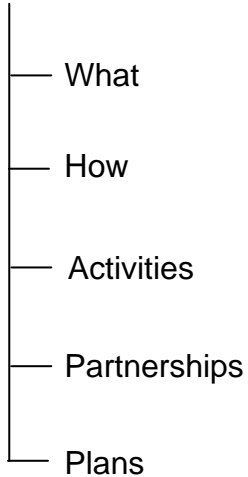
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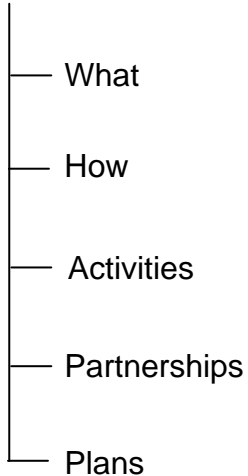




- **Case studies**
- **Research projects**
- **Development of Methods and Techniques**
 - Case Study Methodology
 - Tool inventarisation
 - Certification (Keurmerk)
- **Development of Tools**
 - Repository & transformation tools
 - GenSpect
 - Yasper
- **Knowledge dissemination and valorisation**
 - Symposium VVSS
 - Centre of excellence in test methods, techniques and tools
 - Publications e.g. Case Study Methodology and papers
 - Presentations



1. Requirements Analysis
2. Architecture Analysis
 - Component structure
 - Information structure
 - Detailed design
3. Software Code Analysis
 - Structure analysis
 - Behavior analysis
4. Testing of Executing System
5. Security Analysis
6. Performance Analysis
7. Usability Analysis



- Requirements
 - Requirements & Model analysis (Citizen Service Number)
 - Approach to “Complete and sound requirements & test scenarios” (PT-chipcard)
- Architecture
 - Quick scan on Healthcare planning package
 - Technical knock-out criteria of 2 software packages (Electronic Patient Client System)
 - Automated car parking system
- Software Code
 - Healthcare planning package
 - Security layer Model trains
 - Blood heating system
 - Printer control system
- Test Execution including statistical analysis
 - Guard the execution of the tests based on defined scenarios (PT-chipcard project)
 - Social security system
- Usability analysis (Distribution-website electronic newsletters)
- Performance analysis (Healthcare planning package)
- Security analysis (Distribution-website electronic newsletters)
- Case study methodology (certification)
 - Failure reporting system energy companies
 - Company quality assurance and testing methodology

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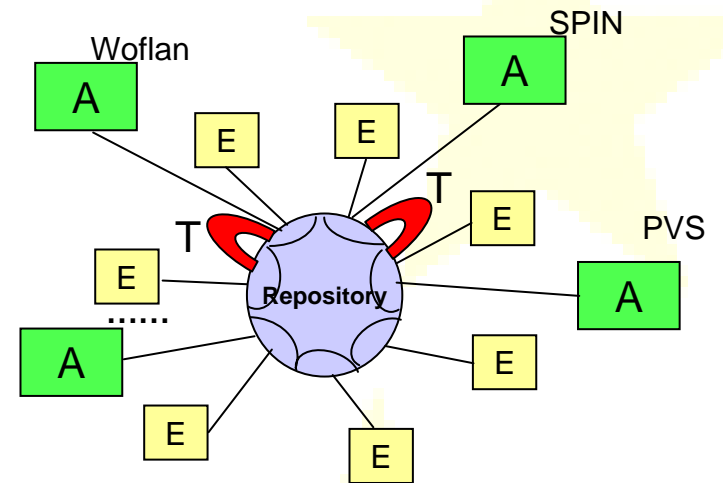
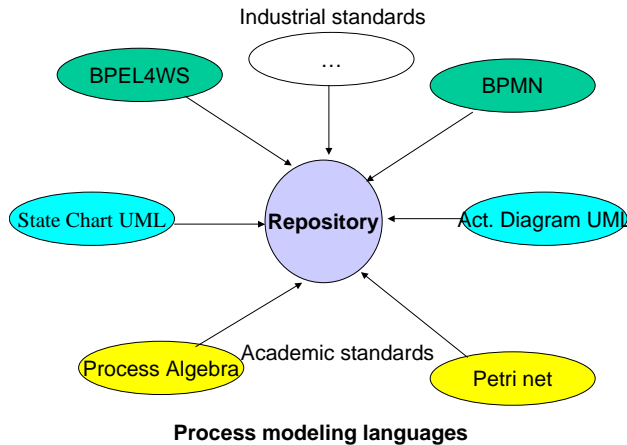
Related research projects

1. STRESS statistical testing
2. AIMES architectural modeling of embedded systems
3. VoLTs Visualization of Large Transition Systems

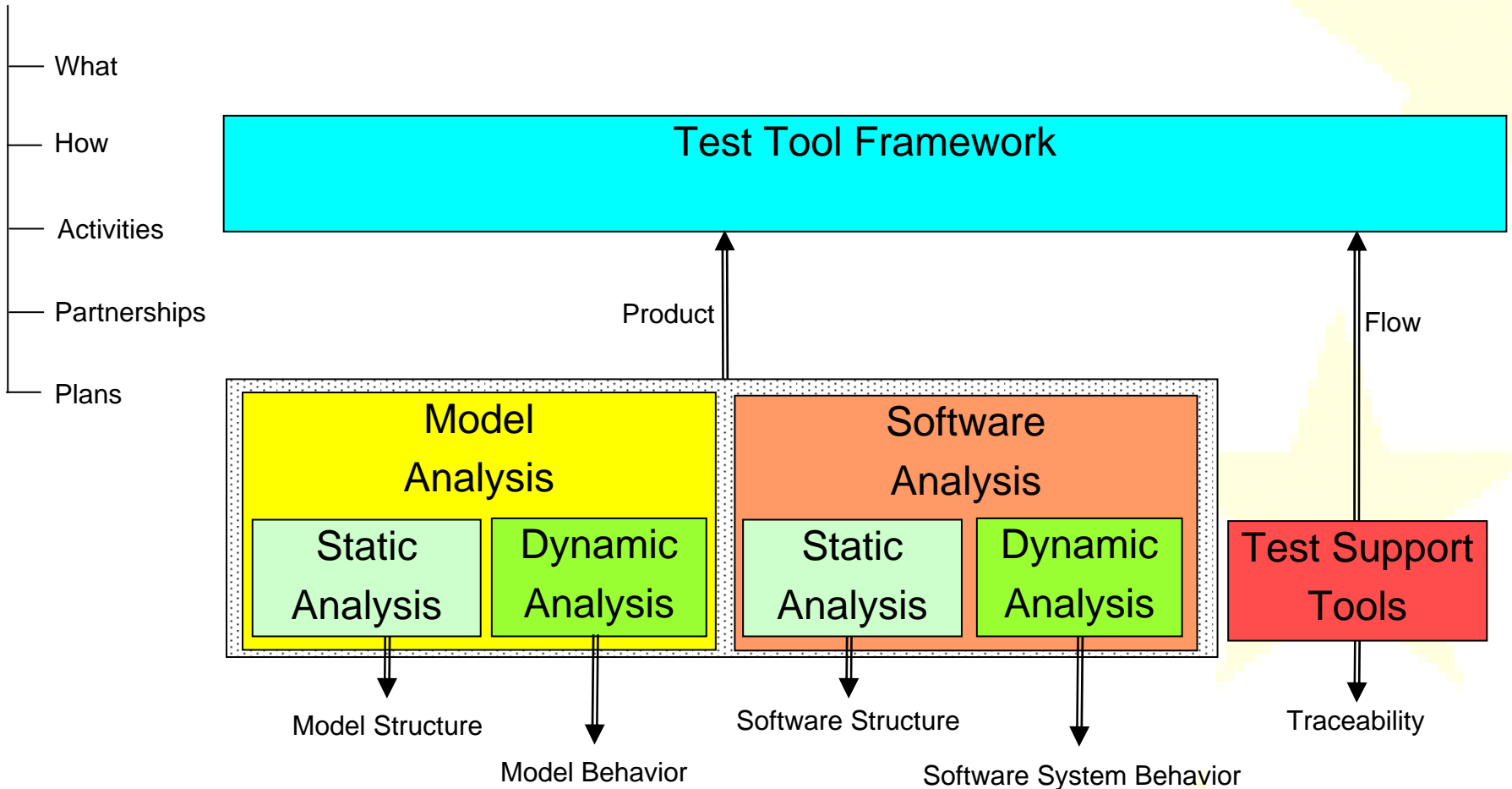
Internal research projects

1. Repository including corresponding tools
2. Tool inventory, categorization and implementation
3. Gathering, judging and implementing Checklists
4. Case Study Methodology
5. Showcases FEAST, VeCriP, Biometric passport
6. Certification (Keurmerk)

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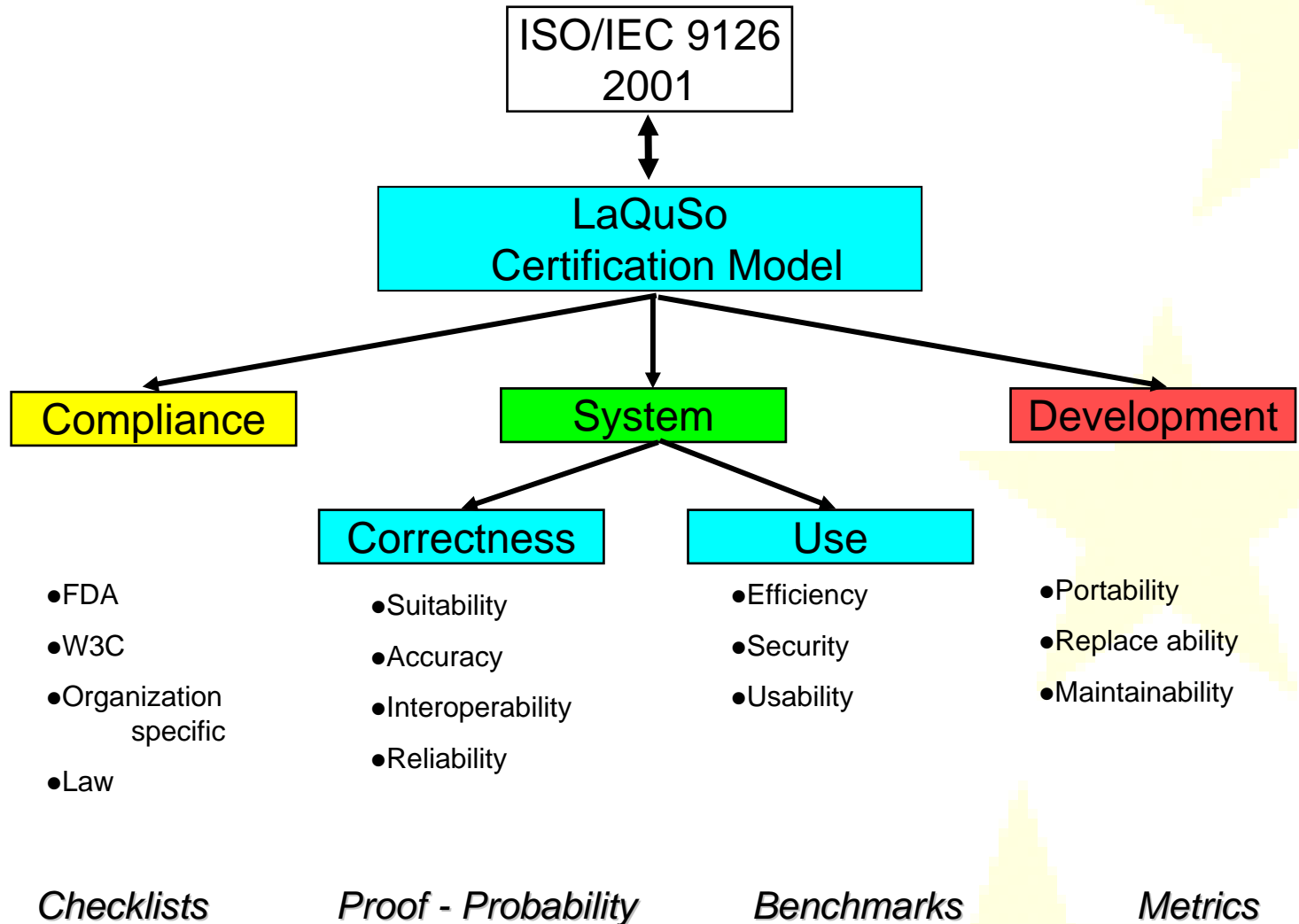


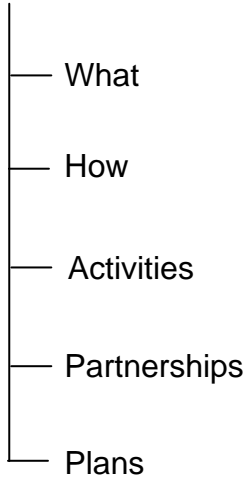
(2) Tool categorization



(6) Certification (Keurmerk)

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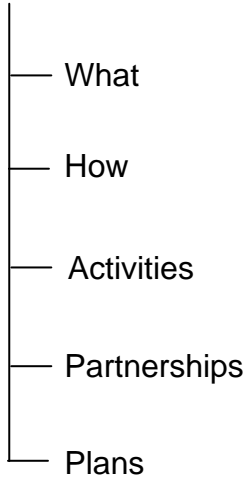


- **Partner**
 - ◆ A long term exchange of knowledge
 - ◆ Sponsor of research
- **Friend**
 - ◆ A long term relationship
 - ◆ Mutual interest on several issues
- **Project relation**
 - ◆ LaQuSo is doing a case study, research or certification project for/with this relation

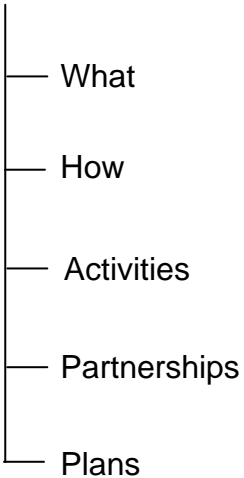


Possible case studies and research projects:

1. case studies with students
2. professional (case) studies
3. participation in research projects
4. outsourcing and co-sourcing of research



- Scientific institutes
 - **Radboud University Nijmegen (1/6/2005)**
 - University Twente
 - CWI
- Industrial partners
 - **PinkRocade**
 - Verum
 - Tiobe
 - Refis
 - H&B
 - **Software Improvement Group (SIG)**
- Friends
 - TestNet (Dutch industrial test professionals)
 - Platform Productsoftware



Clients

- GGzE
- Kema
- Ortec
- Trans Link Systems
- PinkRoccade
- StartPost
- Verum
- H&B
- Organon
- NBG Industrial Automation
- Deloitte
- CVSS
- Optas
- Tiobe
- ErasmusMC
- ProRail

Prospects

- Gartner
- Compumatica
- ControlPay
- Progress Software
- IBM
- Raet
- InfoSupport
- DataCase
- Pallas Athena
- CVZ
- Tridion
- AtosOrigin
- CapGemini
- LogicaCMG
- Sogeti
- Philips Medical Systems

What

- Cooperation with Radboud University

How

- LaQuSo repository

Activities

- Showcases

Partnerships

- Products and productized services

Plans

- Presentations and Publications

- Partnerships

- VVSS2005



LaQuSo

★ Laboratory for Quality Software

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